

Date: Thu, 13 Oct 94 04:30:33 PDT  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: List  
Subject: Ham-Homebrew Digest V94 #302  
To: Ham-Homebrew

Ham-Homebrew Digest                      Thu, 13 Oct 94                      Volume 94 : Issue    302

Today's Topics:

          coffee-can notch filters?  
          help with 12v supply regulation  
          How to design VCO?  
          Lead-Acid Charger  
          pin diode attenuators & AGC  
          Suggestions on Lemon Powered QRP rig  
          Tube/Valve Amp parts

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>

Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Wed, 12 Oct 1994 13:31:06 GMT  
From: zlau@arrl.org (Zack Lau (KH6CP))  
Subject: coffee-can notch filters?

Bill Turner W7LZP (wrt@eskimo.com) wrote:

:

: The coffee-can type filters work pretty well for receiving, but they're  
: too lossy to use for transmitting. A friend of mine brought a six meter  
: version into work the other day and we hooked it up to a \$30k HP  
: impedance analyzer just to see what it was REALLY doing. It had a nice  
: sharp peak at 50 MHz just as advertised, but you should have seen the  
: look on his face when he realized it had a 3db insertion loss. This  
: means that half the power through it was lost as heat. Good thing he  
: wasn't running a KW - would have kept the room nice and warm!

The loss for a given filter topology is a function of the ratio between

the unloaded and loaded  $Q$ s. Thus, you can reduce the loss to acceptable levels by increasing the bandwidth of a bandpass filter (I assume by a "sharp peak" you are talking about a BPF). This is why inductor/capacitor input circuits can sometimes do as well as expensive cavity input circuits on preamps--sometimes you can lower the loaded  $Q$  enough to compensate for the lossier parts while still getting the required impedance transformation.

: The problem of course is that there is a very large amount of  
: circulating tank current in the device. Had it been silver-plated, it  
: probably would have been ok. If you still want to try one for six  
: meters, email me and I'll get you the dimensions. For other bands you  
: could scale it up or down, but at higher freqs, the loss will be even  
: higher due to increased skin effect.

Silver plating tends to be over-rated. To reduce the loss from 3 dB to 1 dB (still a lot of heat at the kW level), you would have to improve the unloaded  $Q$  by a factor of 2.7. I doubt that silver plating would improve a tin plated can that much. My guess is that you would be lucky to get a 20% improvement in  $Q$ . Of course, silver plated cavities look a lot nicer than unplated copper ones--a big factor if you are trying to sell something.

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Zack Lau KH6CP/1                      2 way QRP WAS  
   8 States on 10 GHz  
Internet: zlau@arrl.org    10 grids on 2304 MHz

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Date: 12 Oct 1994 18:21:50 GMT  
From: greendot@lamar.ColoState.EDU (Robert Taylor)  
Subject: help with 12v supply regulation

Hello I am building a 12v regulated power supply but i need help regulating it! I don't know which transistor's to use or exactly how they should go. The transformer is a 12 amp non center tap. could someone please mail about what the suitable transistors would be and how to control them!

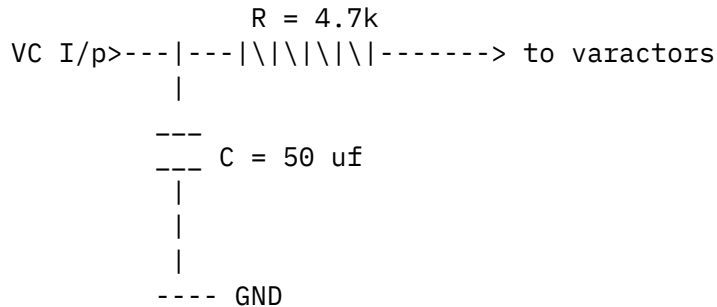
Thanks a bunch  
Robert

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Date: 13 Oct 1994 07:48:00 GMT  
From: fredkuo@PROBLEM\_WITH\_INEWS\_DOMAIN\_FILE.UCSD.EDU (m330\_fredkuo)  
Subject: How to design VCO?

I have a question on VCO design : the resistor and capacitor of voltage control input, normally for filtering out the noise ,seems to change the PLL characteristics.

for example, a vc input as follows



The big capacitor 5uf is directly parallel connects with the loop filter of PLL. Should I take this capacitor as a part of the PLL loop filter? And, how can I design a VCO that will not affect the PLL performance ?

fred Kuo | BV3DH  
PO BOX 9-99, Hsinchu, Taiwan

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Date: Wed, 12 Oct 1994 01:13:24 GMT  
From: tkreyche@zdlabs.ziff.com (Tom Kreyche)  
Subject: Lead-Acid Charger

In article <371ejt\$8c5@snoopy.jh.org>, ss@JH.Org (Steve Steinberg) wrote:

> I want to build a battery charger for deep-cycle (marine) batteries.....

I called Unitrode at 603-424-2410 and received a copy of their "Product and Applications Handbook 1993-1994." Besides the product information on their "Sealed Lead-Acid Battery Charger" chip there is an extensive app note "Improved Charging Methods for Lead-Acid Batteries Using the UC3906." These two docs tell more than you'll need to know about the subject. The UC3906 is the chip used in the charger circuit in the 1994 ARRL handbook.

-tk

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Date: 12 Oct 1994 20:14:37 GMT  
From: kirkland@bgtys22.bnr.ca (Bill Kirkland)  
Subject: pin diode attenuators & AGC

Does anyone have any suggestions on building pin diode

attenuators @ 9 MHz. My interest is in building an IF stage with pin diode attenuators for AGC and I have been thinking about using the MAR or MAV series of amplifiers for the amplifier chain. I know that this might be overkill when you could use MC1350's or dual gate mosfets but the MC1350's are only rated 0 - 70 deg C and dual gate mosfets seem to be extremely hard to obtain and once a source is found relatively expensive.

What else is done for IF amps and AGC?

( I also know about the Plessey series of devices - they too are not cheap  
Does anyone know of a source for Plessey in the states that is willing to supply in the usual small quantities)

Bill Kirkland

p.s. I am presently playing around with the high performance AGC circuit described in Solid State Design for the Radio Amateur and in countless ARRL handbooks that uses the now unattainable Motorola I.C. modified for the MC1350.

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Date: 12 Oct 1994 12:42:51 GMT  
From: clarke@acme.ist.ucf.edu (Thomas Clarke)  
Subject: Suggestions on Lemon Powered QRP rig

In article <37ejpf\$iqi@info2.rus.uni-stuttgart.de>  
moritz@ipers1.e-technik.uni-stuttgart.de () writes:

> I have to disappoint you in saying that there is not such a thing as lemon  
> power. In the system you want to demonstrate the power comes from the  
> electrodes dissolving in the poor fruit, which is being abused as electro-  
> lyte.

> Ever wondered why Nicads are not called potassium-hydroxides?

> These "lemon powered" demos only contribute to confusion  
> and should be dropped quietly.

Apparently non-metals are getting a bad rap in the battery world.

For the sake of political correctness, perhaps we should rename  
NiCads: transition metal/alkaline hydroxide power units,  
dry cells: transition metal/alkaline chloride power units,  
lead acid: heavy metal/inorganic acid power units, and ...  
lemon power: transition metal/organic acid power units.

Tom Clarke

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Date: Wed, 12 Oct 1994 13:36:11 GMT  
From: asj@dsbc.icl.co.uk (Adrian Jefferies)  
Subject: Tube/Valve Amp parts

Hi

The following was previously posted to rec.music.makers.guitar.

I am in the process of performing a service on my mid 60's Fender Princeton guitar amplifier.

I have been having trouble locating sources for the valves [tubes] & high value (450V) electrolytic capacitors. Can anyone recommend places to get these parts, preferably in the UK? I have got the parts I need on order, but with hindsight I should have spent a bit more time calling around. I'll be using new Fender valves - I won't admit to how much these things have cost me .... I was in hurry ....

I don't read this newsgroup, so any email responses gratefully received. I'll collate & repost any pertinent information.

Regards, Adrian  
asj@dsbc.icl.co.uk

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End of Ham-Homebrew Digest V94 #302  
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